The Bridge to Corn Ethanol

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Good morning and thank you very much to the program sponsors and organizers for inviting me to BioEnergy 2000.

For someone who primarily represents interests centered in the midwest, Buffalo may seem like an unusual place for a bio-energy meeting, but it was not far from here, in Oswego, New York on the shore of Lake Ontario where the corn processing industry got its start when the first corn starch refinery was built there in 1848.

The first time I heard the term "bridge to corn ethanol" was about four years ago in conversations with various DOE, commodity group and private industry people. They were right to point out that we had allowed a distance to grow between those of you who are working to make ethanol from many and diverse feedstocks and those of us who work with the existing corn-based ethanol industry.

This distance did not grow up out of any difference of opinion of the short-term or long-range importance of ethanol and other renewables to our nation's security and economy. Certainly the events in world oil markets of the past six months have re-emphasized the importance of our work, and should serve to remind all of us, whether technical or business people, that developing alternatives to petroleum-based fuel and chemical products remains a matter of great urgency.

In some ways, this distance grew from the long lull in world oil prices, and the ability of some to simply put the reality of petroleum stocks out of their minds.

For those of us in the existing corn ethanol industry, this led to a focus on maintaining and incrementally expanding those markets we already served.

For those exploring the new technologies and business models needed to develop a renewables industry capable of supplying substantial amounts of our fuel and chemical products in led to an even longer-term attitude.

However you analyze it, the energy prices of the past 10 years led to us speaking less, and concentrating more upon our own individual interests, and not working together as much as we should on the underlying societal decisions necessary to make a large-scale renewables industry a reality.

This began to change about four years ago. I certainly can't tell you why, but both sides of the renewables equation realized they needed to spend more time talking. From this came the idea of the "bridge to corn ethanol", an effort to reach out from the community working on technologies that can move us from a few percent renewable fuel and materials supply to 20 or even 50 percent, to the groups who have the hands-on experience of operating in the renewables area.

The real question now is not so much how to join together, but how to draw a coherent and achievable way to move from our current ethanol industry to a much broader industry in the future.

Rather than present you with complicated roadmaps and images, I'd like to leave this nice, soothing picture on the wall for a few minutes. To me, it describes the bridge to corn ethanol.

We can see what's immediately in front of us very well. You'll certainly be talking about the current issues in ethanol marketing a lot over the next few days.

Beyond that, we can see clearly about a quarter way over the bridge. Over the middle is less clear, and on the other side of the bridge, unless your glasses are better than mine is very murky.

So, what I'd like to do is get over the bridge one step at a time.

First, the part we can see clearly. Today's corn and corn starch based ethanol industry has the ability and the capacity to expand production well beyond today's one and a half billion gallons plus of production with no major incremental technology. In order for this to happen, we need to see real action on federal policy on oxygenated fuels. While there are many legislative and regulatory changes apparently on the horizon, the industry continues to wait for a tangible answer to this question before reaching its capacity.

Second is the part we can see just before the peak of the bridge. Today, we have a small number of highly developed bio-refineries producing food, feed and industrial products from corn. In the process of making these products, these facilities generate millions of tons of material that may be economically underutilized, and may be better used as feedstocks for increasing current ethanol and bioproduct production. If the technology to do this were available, as much as 10% more ethanol could be produced within existing facilities, with no additional costs in raw material acquisition and transportation. What is holding back this possibility is that these feedstocks have substantial cellulosic material – the same material present in most of the major bio-energy crops under discussion at this meeting.

What's clear is that the first challenge in getting over this bridge is to deal with the technologies of cellulosic conversion. And, what better place to start than with materials that are already at hand. If I can paraphrase an old, and badly misquoted statement, what's good for corn is good for ligno-celluosics.

Obviously I'm plugging increased research on corn fiber left over from traditional corn milling processes. But, beyond corn fiber, there are a wealth of materials from other well established food processes that can be looked at for fuel or chemical production processes, whether they come from grain, oilseed, fruit, fiber crop or vegetable production.

Just over the hump on this bridge is the integration of new, and necessary, feedstocks for ethanol production. Crop residues – one of the various substrates known as biomass – have an interesting, but yet to be fully defined potential. Existing bio-refineries are, by nature, located near crop production areas. Collection and mass reduction costs for diffuse materials such as field crop residues remain major challenges.

Finally, on the other side of the bridge, where we can't quite see, is the integration of large scale production of crops for fuel and industrial applications.

As we devote our time and resources to this future, we need to remember what the true meaning of vision is. It's been said that one persons vision is another persons apparation. Our challenge lies in continuing to broaden and deepen the communication between the corn ethanol industry and the

broader bioenergy and bioproducts communities to ensure that when we get to the other side we're in the same place.

I hope these short comments will provide some thoughts for the rest of the panel and the group and look forward to the discussion to follow.